

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

November 21, 1883.—J. W. Hulke, Esq., F.R.S.,
President, in the Chair.

The following communications were read :—

1. "On the Skull and Dentition of a Triassic Mammal (*Tritylodon longcevus*, Ow.) from South Africa." By Prof. Owen, C.B., F.R.S., F.G.S.

The specimen described in this paper formed part of a collection containing remains of some of the known South-African Triassic Reptilian genera, and agreed with them in its mode of fossilization. It was submitted to the author by Dr. Exton, of Bloemfontein. The specimen is a nearly entire skull, wanting only the hinder part, and it measures about $3\frac{3}{4}$ inches in length, from the broken end of the parietal crest to the point of the united premaxillaries. The upper surface shows the anchylosed calvarial portions of the parietals, and the frontal bones divided by a suture; the contiguous angles of these four bones are cut off, so as to leave an aperture, occupied by matrix, which may be a fontanelle, or a pineal or parietal foramen. The frontals form the upper borders of the orbits, which are bounded in front by the lacrymal and malar bones, and were not completed behind by bone. Each frontal is narrowed to a point at the suture between the nasal and maxillary. The nasals are narrow, but widen in front to form the upper border of the exterior nostril, which is terminal, and is completed by the premaxillaries. The maxillaries are widened posteriorly, then constricted, and again widened before their junction with the intermaxillaries.

The teeth include a pair of large round incisors, broken off close to the sockets, and showing a large pulp-cavity, surrounded by a complete ring of dentine, which is covered by a thin coat of enamel on the front and sides. At 2 millim. behind each of these teeth is the socket of a smaller premaxillary tooth; this tooth apparently had a thin wall and a pulp-cavity relatively larger than in the anterior tooth. It is separated by a ridged diastema from the series of six molar teeth on each side, the first of which has a sub-triangular crown with the base applied to the second tooth. The latter and the four following teeth are nearly similar, subquadrate in form, with the crowns "impressed by a pair of antero-posterior grooves, dividing the grinding-surface into three similarly disposed ridges, and each ridge is subdivided by cross notches into tubercles. Of these there are, in the second to the fourth molar inclusive, four tubercles on the mid ridge, three on the inner ridge, and two on the outer ridge."

The author discussed the relations of this new form of mammal,

especially as indicated by the structure of the teeth, which he showed to resemble those of *Microlestes*, from the Keuper of Württemberg and the Rhætic of Somersetshire, and those of the Oolitic genus *Stereognathus*, the former having on each tooth two multituberculate ridges, and the latter three ridges, but with only two tubercles on each. The fossil presents no characters to show definitely whether the animal it represents was a placental or a non-placental mammal.

2. "Cranial and Vertebral Characters of the Crocodilian Genus *Plesiosuchus*, Owen." By Prof. R. Owen, C.B., F.R.S., F.G.S.

In this paper the author, with the view of showing that the Kimmeridgian *Steneosaurus Manselii*, Hulke, really forms the type of a distinct genus, discussed the characters by which Cuvier divided the fossils referred by him to the Crocodiles into three principal groups, to which Geoffroy St.-Hilaire gave generic names, and those by which the latter author afterwards distinguished his genus *Steneosaurus*, including Oolitic forms, from the Liassic genus *Teleosaurus*. From his exposition of these characters the author concluded that the above-named species does not belong to *Steneosaurus*, Geoff., and he proposed to make it the type of a new genus, *Plesiosuchus*, characterized by the convergence of the frontal bones to a point nearer the apex of the skull than in *Steneosaurus*, by the extension of the gradually attenuated nasal bones into a point penetrating the hind border of the nostril, and by other peculiarities of the skull, teeth, and vertebræ. The author pointed out that this form, like *Steneosaurus*, helped to bridge over the space between the Liassic Teleosaurs and the Tertiary and recent Crocodiles, even approaching nearer to the latter than the older Oolitic type.

3. "On some Tracks of Terrestrial and Freshwater Animals." By Prof. T. McKenny Hughes, M.A., F.G.S.

The author's observations have been made on certain pits in the district about Cambridge which are filled with the fine mud produced in washing out the phosphatic nodules from the "Cambridge Greensand"—a seam at the base of the Chalk Marl. As the water gradually dries up, a surface of extremely fine calcareous mud is exposed. This deposit is often very finely laminated, and occasionally among the laminae old surfaces can be discovered, which, after having been exposed for some time to the air, had been covered up by a fresh inflow of watery mud into the pit. The author described the character of the cracks made in the process of drying, and the results produced when these were filled up. He also described the tracks made by various insects, indicating how these were modified by the degree of softness of the mud, and pointed out the differences in the tracks produced by insects with legs and elytra, and by Annelids, such as earthworms. The marks made by various worms and larvæ which burrow in the mud were also described.

Marks resembling those called *Nereites* and *Myrianites* are produced by a variety of animals. The groups of ice-spicules which are formed during a frosty night also leave their impress on the mud. The author concluded by expressing the opinion that *Cruziana*, *Nereites*, *Crossopodia*, and *Palæochorda* were mere tracks, not marine vegetation, as has been suggested in the case of the first, or, in the second, the impression of the actual body of ciliated worms.

BIBLIOGRAPHICAL NOTICES.

Farm Insects: being the Natural History and Economy of the Insects injurious to the Field-crops of Great Britain and Ireland, and also those which infest Barns and Granaries. By JOHN CURTIS, F.L.S. Illustrated with numerous Engravings. 8vo. London: Van Voorst, 1883.

THE value of the work of the late John Curtis on *Farm Insects* is so generally recognized that we need do little more than call attention to this reissue of it in its original form. No doubt economic entomology has made considerable progress since the first publication of the book in its complete form in 1859; but while we may admit that this progress would enable us to correct some statements and to fill up gaps in the history of certain species which the author was compelled to leave, it is astonishing to notice how little the broad treatment of the subjects would need to be modified. The work of the great English entomologist was in fact so thoroughly done according to the lights of his day, that later writers have practically added but little to it, and we may say that the agriculturist need wish for no better guide to the history of those minute and often hidden enemies whose attacks are frequently so fatal to his interests; while to the entomologist, at any rate, this reprint of a classical work which has been long unprocurable will prove exceedingly welcome, and he will hardly be inclined to regret that the contents of the book have not been meddled with. The plates alone, executed in the author's happiest manner, are a delight to the entomological eye, quite apart from their practical usefulness; they are, as the publisher says in his "Advertisement," "so excellent and so full of detail" that their reissue to the public, with the accompanying text, not only needs no apology, but entitles him to the thanks of all interested in entomology.

John Curtis, as we all know, was so careful and conscientious a worker, that it is no great wonder if his labours in the department of agricultural entomology carried him so far in advance that even now we have little to add to his account of the natural history of the farmer's insect foes, and that all subsequent writers on the subject have been compelled to borrow largely from his pages. It is